

REMARKS**Claim Rejections under 35 U.S.C. 102**

Claims 9-10, 12 and 14-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Tsai (US 5,436,986). Examiner in said Office action states that Tsai discloses an optical device with at least two input optical fibers (Fig. 10); at least two output optical fibers; at least two main reflecting surfaces and at least two secondary reflecting surfaces, each secondary reflecting surface being parallel to the one of the main reflecting surfaces to connect an optical path from one of the input optical fibers to one of the output optical fibers.

In response to this rejection, applicants have amended independent claims 9 and 12, adding more limitations therein which define over the prior art cited by Examiner in said Office action. Said amendments are substantially in accordance with Examiner's advice re the objection to claim 11, as detailed on pp. 4-5 of said Office action. Applicants have also canceled claims 10, 11, 16 and 17. Thus claims 9, 12 and 14-15 remain subject to the rejection. Applicants assert that amended claims 9 and 12 should now be allowable, as follows:

Regarding amended claim 9, the present invention discloses an optical switch comprising at least two input optical fibers; at least two output optical fibers; at least two main reflecting surfaces and at least two secondary reflecting surfaces, each secondary reflecting surface being substantially parallel to the one of the main reflecting surfaces to connect an optical path from one of the input optical fibers to one of the output optical fibers, wherein when the switch is provided, light beams from the input fiber reflect once off the main reflecting surface, then reflect once off the secondary reflecting surface, then reflect a second time off the main reflecting surface, and then are output by the output fiber. However, Tsai's optical switch fails to provide such a switchable communication between input and output fibers. As disclosed in Figs. 10-11 of Tsai, the light beams from the input fiber

reflect once off the main reflecting surface, then reflect once off the secondary reflecting surface, and then are output by the output fiber; they do not reflect a second time off the main reflecting surface. Therefore Tsai fails to disclose all the limitations of the optical switch of the present invention as recited in amended claim 9. Applicants assert that the structure and function of the present invention is very different from that of Tsai, and that amended claim 9 is novel over this reference.

Furthermore, the optical switch of the present invention defined by amended claim 9 is unobvious in view of Tsai. As asserted above, Tsai fails to disclose "when the switch is provided, light beams from the input fiber reflect once off the main reflecting surface, then reflect once off the secondary reflecting surface, then reflect a second time off the main reflecting surface, and then are output by the output fiber." In Tsai's optical switch, the light beams from the input fiber are reflected by the main reflecting surface and the secondary reflecting surface to the output fiber. A person of ordinary skill in the art could not have derived from Tsai the optical switch of the present invention having the light beams reflecting a second time off the main reflecting surface. Thus amended claim 9 is unobvious over this reference.

Regarding amended claim 12, the present invention discloses a multi-channel optical switch comprising plural pairs of input ports and output ports and a plurality of reflecting surfaces; such that when no switch is provided, light coming from one input port leaves from the corresponding output port which is aligned with said input port diametrically; and when the switch is provided, some respective light coming from at least one input port is reflected to the corresponding output port, which is a neighbor of said at least one input port, and some respective light coming from at least another input port is directly transmitted to the corresponding output port. However, Tsai's optical switch fails to provide such a switchable communication between input and output fibers. As disclosed

in Tsai's switch, the light beams from the input fiber are all directly transmitted to the corresponding output fiber when the switch is out of the light path and the light beams from the input fiber are all reflected by the plurality of reflecting surfaces when the switch is provided. Tsai does not provide a switchable communication with some respective light coming from at least one input port being reflected to the corresponding output port and some respective light coming from at least one input port being directly transmitted to the corresponding output port at the same time. Therefore Tsai fails to disclose all limitations of the optical switch of the present invention as recited in amended claim 12. Applicants assert that the structure and function of the present invention is very different from that of Tsai, and that amended claim 12 is novel over this reference.

Furthermore, the optical switch of the present invention defined by amended claim 12 is unobvious in view of Tsai. As asserted above, Tsai fails to disclose "when the switch is provided, some respective light coming from at least one input port is reflected to the corresponding output port, which is a neighbor of said at least one input port, and some respective light coming from at least one input port is directly transmitted to the corresponding output port." The present invention provides more types of switchable communication than Tsai. One skilled in the art would have no motivation from Tsai to derive the optical switch of the present invention. Thus amended claim 12 is unobvious over this reference.

In summary, independent claims 9 and 12 are patentable under 35 U.S.C. 103 over Tsai, and all their corresponding dependent claims 14-15 should also be patentable.

Claim Rejections under 35 U.S.C. 103

Examiner has rejected claim 13 as being unpatentable over Tsai (US 5,436,986). As disclosed in Figs. 10-11 of Tsai, the optical switch comprises two input fibers on the same side of the switch, two output fibers on the other side of the switch and four separate mirrors. Each of the input fibers is collinear with

one corresponding output fiber. Two pairs of mirror surfaces are respectively arranged in the light path wherein two mirror surfaces are respectively parallel to the other two mirror surfaces as stated by Examiner. A person of ordinary skill in the art could not have derived the optical switch of the present invention with at least three pairs of input ports and output ports in view of Tsai. Thus claim 13 is unobvious over this reference.

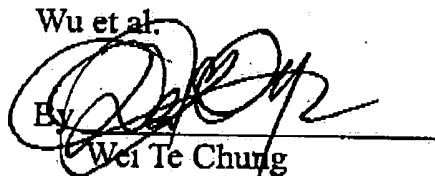
Furthermore, claim 13 directly depends from claim 12, and claim 12 is asserted to be patentable in view of Tsai as detailed above. Therefore claim 13 should be allowable.

Finally, the other references cited by Examiner in the first Office action including the Notice of References Cited also fail to disclose the unique features of the present invention as detailed above. Therefore, a fortiori, claims 9 and 12-15 should be allowable.

In view of the above amendments and remarks, the subject application is believed to be in a condition for allowance, and an action to such effect is earnestly solicited.

Respectfully submitted,

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